

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/540,088	BERTHOMIEU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thomas E. Lazo	3745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date 6/20/05 | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                       | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance              |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Leo McCormick (25,897) on 8/24/06.

The application has been amended as follows:

#### IN THE CLAIMS:

Claims 1-17 replace all prior versions of claims 1-17 in the application as follows:

1. [Currently Amended] A pneumatic servomotor for [an] assisted braking, comprising a casing (2) having a longitudinal axis (X) and in which a low- pressure chamber (10) and a variable- pressure chamber (8) are defined, in an airtight manner, by a moving partition wall (12) bearing a pneumatic piston (18) in its middle part, a three-way valve (20), arranged at the rear part of the pneumatic piston (18) and controlled by an actuating rod (27), the three-way valve comprising a first valve (22) for a re-equalization between the low-pressure chamber (10) and the variable- pressure chamber (8), and a second valve (24) for the high-pressure supply of the variable- pressure chamber (8), said [supply] second valve (24) comprising a valve seat, borne by a first longitudinal end of a distributor plunger (28) and receiving a longitudinal end of the actuating rod (27), said distributor plunger (28) having, at a second longitudinal end in the opposite

Art Unit: 3745

direction relative to the first longitudinal end, a finger (30), which is perpendicular to the longitudinal axis (X) and which comes into contact with a face of a reaction disk (32) on a braking operation, said reaction disk (32) being accommodated in a housing (34) integral with a push rod (36) for providing an output force to actuate [the actuation of] a master cylinder corresponding to an input force applied to said actuating rod (27), said housing (34) comprising a pneumatic braking-assistance device (D) fitted with a cage (38), a first closed longitudinal end of which is integral with the push rod (36) while [its] a second open longitudinal end is closable by an annular ring (44) integral with the cage (38) and by a reaction piston (42) fitted for a sliding travel inside the ring (44) along the longitudinal axis (X), said reaction piston (42) being reactionnally kept against the ring (44) by a resilient means (40) having a prestress (ch) and bearing by [its] a rear end on the closed first end of the cage (38), and wherein [the] an area consisting of the rear faces (50, 52) of the annular ring (44) and of the reaction piston (42), respectively, constitutes the front longitudinal end of the housing (34) of the reaction disk, characterized in that said device comprises plastically-deformable means (68, 74) for the adjustment of [the braking characteristics] a ratio of the input force to the output force to facilitate a quick stop for a vehicle.

2. (Previously Presented) The pneumatic servomotor according to claim 1, characterized in that the resilient means (40) is a helical spring.

3.(Previously Presented) The pneumatic servomotor according to claim 1 , characterized in that the first means (68) are capable of setting a predetermined value (Vj) to a clearance (j) between

Art Unit: 3745

the planes containing the rear faces (52, 50) of the reaction piston (42) and of the annular ring (44), respectively.

4.(Previously Presented) The pneumatic servomotor according to claim 1, characterized in that the first means (68) are disposed between a front face (66) of the annular ring (44) and a rear face (62) of a flange (60) extending radially outwards from the periphery of the body of the reaction piston (42).

5 (Previously Presented) The pneumatic servomotor according to claim 1, characterized in that said first means (68) consist of a collar.

6.(Previously Presented) The pneumatic servomotor according to claim 4, characterized in that said first means (68) consist of a ring-shaped protrusion, made in one piece with the annular ring (44) and extending axially forwards from the front face (66) of the annular ring.

7.(Previously Presented) The pneumatic servomotor according to claim 4; characterized in that said first means (68) consist of a ring-shaped protrusion, made in one piece with the flange (60) and extending axially rearwards from the rear face (62) of the flange (60).

8.(Previously Presented) The pneumatic servomotor according to claim 7, characterized in that the second means (74) are capable of setting a predetermined value ( $V_{ch}$ ) to the stressing ( $ch$ ) of the resilient means (40).

9. (Previously Presented) The pneumatic servomotor according to claim 8, characterized in that the second means (74) are accommodated inside the emergency-braking assistance device (D) so as to modify the axial position of the closed first end of the cage (38) relative to the reaction piston (42).

10. (Previously Presented) The pneumatic servomotor according to claim 9, characterized in that the second means (74) consist of a collar, disposed between the front face (66) of the annular ring (44) and the rear face of an inner bearing surface (47) of the cage (38).

11. (Previously Presented) The pneumatic servomotor according to claim 9, characterized in that the second means (74) consist of a ring-shaped protrusion, made in one piece with the annular ring (44) and extending axially from the front face (66) of the annular ring towards an inner bearing surface (47) of the cage (38).

12. (Previously Presented) The pneumatic servomotor according to claim 9, characterized in that the cage (38) comprises a sleeve (381), which is closed at its first front longitudinal end (383) by a cap (382) integral with the push rod (36), and in that the second means (74) are disposed between the front longitudinal end of the sleeve (381) and a rear face of the cap (382).

Art Unit: 3745

13. (Previously Presented) The pneumatic servomotor according to claim 12, characterized in that the second means (74) consist of a ring-shaped protrusion, made in one piece with the sleeve (381) and extending axially towards the cap (382).

14. (Previously Presented) The pneumatic servomotor according to claim 13, characterized in that said cap (382) is interlocked with the sleeve (381) by means of a ring-shaped extension, which is arranged radially outside relative to the ring-shaped protrusion constituting the second means (74), and capable of folding over onto the front face of the cap (382) owing to a plastic deformation.

15. (Currently Amended) A manufacturing process for a pneumatic servomotor for an assisted braking, fitted with an emergency-braking assistance device (D), said device (D) being defined by a cage(38) that is integral with a push rod (36), retains a reaction disk (32), and is closable by an annular ring (44) integral with the cage (38) wherein a reaction piston (42) slides within the ring (44) and is retained against the ring (44) with a prestress (ch) from a resilient means (40) and wherein an area consisting of the rear faces (50,52) of the annular ring (44) and of the reaction piston (42), respectively, constitutes a front longitudinal end of the cage (38) and wherein plastically-deformable means (68, 74) may be modified to adjust a ratio of an input force to an output force during a brake application to facilitate a quick stop for a vehicle, characterized in [including] that the modification of the plastically-deformable means includes the following steps:

Art Unit: 3745

- a preliminary step, in which the first means (68) are plastically deformed in an axial direction so as to set a predetermined value ( $V_j$ ) to [the] a clearance (j) between the rear faces (52, 50) of the reaction piston (42) and of the annular ring (44), respectively; and
- a subsequent step, in which the second means (74) are plastically deformed in an axial direction so as to set a predetermined value ( $V_{ch}$ ) to the stressing (ch) of the resilient means (40).

16. (Currently Amended) The manufacturing process wherein [a] the device (D) for the implementation of the preliminary step in claim 15 is characterized by [in that it comprises] a first element (202) and a second element (204), movable relative to the first element (202) along the longitudinal axis (X), said first element (202) having a reference surface, which defines the predetermined value ( $V_j$ ) of the clearance (j), while the second element (204) comprises a ring-shaped pressing surface, which cooperates with the front face (64) of [the] a flange (60) of the reaction piston (42).

17. (Currently Amended) The manufacturing process for the implementation of the subsequent step in claim 16, characterized by the device (D) including [in that it comprises] a third element (302) and a fourth element (304), movable relative to the third element (302) along the longitudinal axis (X), said third element having a ring-shaped supporting surface for the front face (66) of the annular ring, and a means (307) for the detection of the force applied to the reaction piston (42) by the resilient means (40), while the fourth element (304) comprises a

Art Unit: 3745

surface for a force application to the cage (38), so as to deform the second means (74) plastically in the course of an axial travel of the fourth element (304) towards the third element (302), in such a way that the stressing of the resilient means (40) is equal to the predetermined value (Vch).

The above changes to the claims have been made to more clearly claim the invention.

#### **IN THE DRAWINGS:**

The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

In figure 2, reference number "54" should be --56-- and reference number "56" should be --54--.

In figure 4, the reference number "68" near the bottom of the figure should be deleted.

In figure 5, the reference number "68" near the bottom of the figure should be deleted.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).



In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

### **REASONS FOR ALLOWANCE**

The instant invention is deemed to be directed to an unobvious improvement over the invention patented in U. S. Patent No. 6,931,979 to Bacardit et al. The improvement comprises A pneumatic servomotor with a pneumatic braking-assistance device including a plastically-deformable means (68, 74) for the adjustment of a ratio of the input force to the output force to facilitate a quick stop for a vehicle and a manufacturing process thereof for the purposes of more accurately adjusting the prestress of the spring to define the threshold at which the assistance ratio is increased.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **PRIOR ART**

The patent to Bacardit et al. is cited for the showing of a pneumatic braking-assistance device similar to applicant's but lacking a plastically-deformable means.

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consists of three patents.

Art Unit: 3745

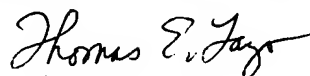
Kobayashi, Mortimer, and Nell et al. are cited to show pneumatic servomotors with pneumatic braking-assistance devices.

***Contact Information***

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thomas Lazo whose telephone number is (571) 272-4818. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Edward Look, can be reached on (571) 272-4820. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas E. Lazo  
Primary Examiner  
Art Unit 3745  
August 24, 2006